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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,774	12/02/2003	Todd M. Rossi	FDS-P7.2-US	3845
21616	7590	06/30/2004	EXAMINER	
LAW OFFICES OF MARK A. GARZIA, P.C. 2058 CHICHESTER AVE BOOTHWYN, PA 19061			BARBEE, MANUEL L	
			ART UNIT	PAPER NUMBER
			2857	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/725,774

Applicant(s)

ROSSI ET AL.

Examiner

Manuel L. Barbee

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Reference symbol "100" shown in the specification on page 6, line 3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because of the inclusion of legal phraseology. All text in the abstract after and including the phrase "It is emphasized that the abstract is provided ..." should be deleted and the abstract should be rewritten appropriately. Correction is required. See MPEP § 608.01(b).

3. The disclosure is objected to because of the following informalities:

On page 21, line 10, delete "2B" and insert --6B--.

The specification should be amended to include references to Figures 6A, 6C, 6D, 6E and 6F at the point where the subject matter of these figures is discussed.

Appropriate correction is required.

### ***Claim Objections***

4. Claim 15 is objected to because of the following informalities: Claim 15 depends from claim 3, however it refers to the method of claim 3. Claim 3 is an apparatus claim. Further, claim 15 redundantly includes limitations for three temperature measurements

already included in claim 3 and specifies the same three temperature measurements found in claim 4. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al. (US Patent No. 5,596,507).

With regard to measuring five parameters associated with a refrigeration system, as shown in claim 1, Jones et al. teach measuring a dozen temperatures (Abstract). With regard to detecting faults based on the measured parameters, as shown in claim 1, Jones et al. teach a computer that identifies trouble spots and produces graphs, tables and prediction commentary (Abstract).

With regard to a data collection unit that has means for providing power, a first microprocessor, a memory, five sensors, and a data port for assisting in communication with the calculating means, as shown in claim 2, Jones et al. teach a computer that would inherently require power and memory, temperature sensors and a sensor lead port connecting to the computer (col. 3, line 48 - col. 4, line 22; computer 82, sensor lead port 72).

7. Claims 11, 12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Proctor et al. (US Patent No. 4,967,567).

With regard to storing a plurality of HVAC system parameters, as shown in claim 11, Proctor et al. teach storing input data for an automobile air conditioning system (col. 2, line 49 - col. 3, line 6). With regard to defining a diagnostic instructions, measuring five but not more than nine system variables and comparing calculated operational variables with stored variables and conveying at least one diagnostic message, as shown in claim 11, Proctor et al. teach measuring pressures and temperatures and comparing the measured variables to stored variables to determine whether the parameters are out of range (col. 2, line 7-56). With regard to the at least five measurements including three temperatures and two pressure measurements including liquid line pressure and suction line pressure, as shown in claims 12 and 14, Proctor et al. teach measuring discharge pressure, suction line pressure, ambient temperature, inlet air temperature, and discharge air temperature (col. 14, lines 8-31).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3-8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. in view of Jayanth (US Patent No. 6,324,854).

Jones et al. teach all the limitations of claims 1 and 2 upon which claims 3-8 depend. Further, with regard to measuring three temperatures including liquid line, outdoor atmospheric and suction line temperature, as shown in claims 3, 4 and 15,

Jones et al. teach measuring suction line, liquid line and ambient air temperature (col. 2, line 65 - col. 3, line 35). Jones et al. do not teach measuring two pressures including liquid line refrigerant pressure and suction line refrigerant pressure, as shown in claims 3 and 4. Jayanth teach measuring pressure near the suction port and the discharge port (col. 3, lines 43-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus for predictive maintenance of HVACR systems, as taught by Jones et al., to include measuring two pressures, as taught by Jayanth, because then more monitored parameters would have increased the diagnostic capability (Jayanth, col. 2, lines 8-33).

Jones et al. do not teach that the power providing means comprises a battery, as shown in claim 5, or that the calculating means has a second microprocessor, as second memory and a second data port, as shown in claim 6. Jones et al. do not teach passing data with RS232 specifications, as shown in claim 7, or that the calculating means is a hand-held computer, as shown in claim 8. Jayanth teaches a hand held computer for diagnosis, which would inherently include a battery for power (Figure 3, computer 34). Jayanth teach a data acquisition system with a microcontroller in addition to the hand held computer and both computers would have memory and data ports for communication (Figure 3). The Examiner takes official notice that communication using RS232 specifications is well known.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus for predictive maintenance of HVACR system, as taught by Jones et al., to include a handheld computer for calculation, as

taught by Jayanth, because then need for each system to have independent sensors and electronics would have been eliminated (col. 2, lines 34-60). It would further have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus for predictive maintenance of HVACR systems, as taught by Jones et al., to include a separate handheld computer in communication with the data acquisition system, as taught by Jayanth, because then it would have been possible to change sensors without changing the handheld computer used for diagnosis. It would further have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus for predictive maintenance of HVACR systems, as taught by Jones et al., to include using RS232 for communication, because then a well known protocol would have allowed communication with many computers.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor et al. in view of Jones et al.

Proctor et al. teach all the limitations of claims 11 and 12 upon which claim 13 depends. Proctor et al. do not teach that the three temperature measurements are suction line, liquid line and outdoor atmospheric temperature. Jones et al. teach measuring suction line, liquid line and ambient air temperature (col. 2, line 65 - col. 3, line 35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the air conditioner diagnosis system, as taught by Proctor et al., to measure the temperatures, as taught by Jones et al, because then preventive maintenance would have been more effective (Jones et al., col. 1, lines 6-25).

**Conclusion**

11. This is a continuation of applicant's earlier Application No. 09/939,012. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 571-272-2212. The examiner can normally be reached on Monday-Friday from 8-4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 571-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.



Art Unit: 2857

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0976.

mlb

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800